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EDITORIAL

Bringing home the gold medals

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As a sport-loving Englishman, I could not pass up the opportunity to introduce 2012's third issue of *Gold Bulletin* with mention of the Olympic Games which, as I write, are well underway in my home city of London. Team GB sit at position 3 in the medal table with a record haul of medals, many of which are gold.

As many of you are probably aware, gold medals are not quite as 'gold' as their name suggests. The London 2012 medals are in fact made up of a mere 1.34 % by weight of gold as a coating, with silver (92.5 %) and copper (6.16 %) making up the bulk of the award. This may appear somewhat mean-spirited, but with each medal weighing just over 400 g, a single solid gold disc would be worth over $20,000 at today's prices…

However, thin films of gold are very important in a number of technical applications. For example, the production of gold-plated electronic components represents the single largest demand for gold in technology at well over 130 tonnes in 2011. Plenty of new exciting applications may also benefit from gold films—recent research into both fuel cells and solar cells has investigated materials boasting thin layers of the yellow metal. Critically, the conductive and corrosion-resistant nature of gold is retained even at nanometre-level thicknesses, meaning that the expensive metal can be used cost-effectively in many cases. The other example which I personally find fascinating is how NASA is using gold in the James Webb Space Telescope, which is currently under construction. A microscopically thin gold coating was needed to enable the large mirrors to most efficiently reflect the infrared light from distant objects under investigation. A couple of weeks ago NASA, released a video specifically highlighting this use of the metal, which can be viewed at http://www.nasa.gov/topics/technology/features/webb-gold.html?goback=%2Egde_3287601_member_140615099. I highly recommend it.

Whilst we do not have any plating applications in this issue of *Gold Bulletin*, we do feature a thorough literature review of one of the other key uses of gold in the field of electronics; bonding wire. Other research papers cover catalysis, sensing and nanoparticle synthesis. It is these types of cutting edge research papers and reviews that have helped drive up the journal's 2011 Impact Factor by almost 30 % to 3.5. So thanks to those of you who continue to contribute your work to the journal. I hope you enjoy this issue.

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